Amendments to the Specification

Please replace the first paragraph starting on page 18 with the following amended paragraph:

Switch 401 is triggered to open by comparator 424 when the voltage at the negative input terminal 463 of comparator [[401]] 424, which is derived from the total signal (program plus noise) at the output of high pass filter 405, exceeds the voltage at positive input terminal 426 of comparator [[401]] 424, which voltage is indicative of the "signal without noise" level from high pass filter 405, as follows: The output of high pass filter 405, the characteristics of which were described above, has a connection to the low pass filter ~~and time delay unit~~ 404. Filter 404 has an 18db per octave high frequency attenuation characteristic with its turnover frequency at 3 kHz. Since the signal entering filter 404 had previously undergone an attenuation of low frequencies of 12 db per octave starting at 800 Hz, the signal emerging from filter 404 has had its components below 800 Hz and above 3 kHz drastically diminished in magnitude. The frequency range below 3 kHz is the range in which the program content of the input signal dominates over high frequency surface noise of recordings such that the output of filter 404 can successfully be taken as representative of the level of signal without high frequency noise. In addition it is not desirable that transients or program material below 800 Hz influence the operation of switch 401. The output of filter 404 is connected to the input of full wave rectifier 406 the output of which is connected to junction 408. Thus, junction 408 registers the momentary absolute value of signal from filter 404. Resistor 410 is connected between the output of full wave rectifier 406 and the input of rectifier 416. Rectifier [[406]] 416 in conjunction with capacitor 415 and potentiometer 420, both connected to ground, serves as a peak detector. Should the voltage at rectifier 416 diminish, the voltage on capacitor 415 discharges through the resistance of potentiometer 420, the discharging time constant chosen to be approximately 100 milliseconds. The slider of potentiometer 420 is connected to the input of D.C. amplifier 422, the output of which is connected to the positive input terminal 426 of comparator 424. Thus, the relatively slowly

discharging voltage at the output of peak detector (rectifier) 416 is providing, by means of user-adjustable potentiometer 420 and D.C. buffer amplifier 422, threshold voltage at positive terminal 426 of comparator 424, this threshold voltage being representative of the ever-changing absolute value of the program content (signal-without-noise) of the signal. The output of high pass filter 405, expressing high-frequency components of the input signal, is connected to full wave rectifier 409, which has no capacitor associated with it to slow its charging or discharging time, thus constituting a tick detector. The output of rectifier 409 is connected directly to negative terminal 463 of comparator 424. When a tick whose frequency content exceeds 3 kHz occurs and the positive voltage at input 463 exceeds the positive voltage of input 426 of comparator 424 thereby, the output of comparator 424 becomes sufficiently negative to open switch 401. Thus, the ticks exceeding approximately 3 kHz are not transmitted from high pass filter 405 to mixer 427 when the tick amplitude exceeds the threshold voltage at terminal 426, which is governed by the sum of the voltage output of peak detector 416 and, furthermore, by the setting of user-adjustable potentiometer 420. Low frequency noise transients are typically caused by scratches, needle drops and cracks in the record. Playback of these yields loud noise transients, rich in both low and high frequencies. Music instruments that produce strong low frequency transients, most notably drums, are far less rich in high frequencies transients than are the scratches, needle drops and cracks. Thus, we are provided with a useful criterion for distinguishing between loud, low frequency noise transients and low frequency music transients.

Please replace the second paragraph starting on page 18 with the following amended paragraph:

In the lower branch of the control circuit the signal passes successively through two differentiators 511 and 513 in series. The output of differentiator 513 is connected to a peak detector consisting of full wave rectifier 515, resistor 516, and capacitor 521. Resistor 516 connects the output of rectifier 515 to input 526 of voltage divider integrated circuit 525 and also to capacitor 521 and resistor 523, the other side of each of the latter two being grounded. The signal is representative of the rate of change of the rate of change (i.e. of the acceleration component) of the input signal. Values of capacitor 517 and resistor 519 are chosen to

provide a time constant of approximately five milliseconds, thus producing some short term stability of the signal at 524 and also playing a role in desensitizing the unit from being disturbed by noise transients, as the value of resistor 509 is chosen to provide, in combination with capacitor 517, a time constant of approximately 2 milliseconds. Similarly, in the lower branch, capacitor 521 and resistor 523 have a time constant of about 2.5 milliseconds and a capacitor 521 and resistor 516 are chosen to produce a time constant of approximately 1 millisecond. Noise transient de-sensitization is needed when this processor is employed as a stand-alone device. However, noise transient de-sensitization is accomplished by the addition of only two resistors (509 and 516) and is also beneficial should an unexpected noise transient succeed, at least in part, in getting through the two previous processors. The output voltage divider integrated circuit 525 provides a voltage that is proportional to the ratio of the voltage at terminal 524 to that at terminal 526. Resistor 527 is connected between the output of integrated circuit 525 and the high end of potentiometer 529. The slider of potentiometer 529 goes to input 532 of mixer 531 and the other end of potentiometer 529 goes to ground. Potentiometer 529 is user-adjustable and is labeled "Ceiling". The other input terminal 534 of mixer 531 is connected to a D.C. bias arrangement symbolized by a D.C. voltage source 535 with a potentiometer 533 in series with a resistor 537 connected across it. This potentiometer is also user-adjustable and is labeled "Floor". The slider of potentiometer 533 provides a user-adjustable means of applying a steady-state voltage to the input of mixer 531. Consequently, the voltage at the output terminal of mixer 531 will be representative of the sum of the fluctuating voltage output of [[ratio detector]] voltage divider integrated circuit 525 and the user-adjusted bias voltage. The voltage at the output at mixer 531 is applied to the control inputs of both filters 502 and 503. The output of mixer 531 is also connected to the input of meter 539, which is provided with a scale calibrated to read the cutoff frequency of filter 502 as a function of the voltage at the output of mixer 531.